This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of determining impulse responses of a medium ~~(2)~~ in relation to the transmission of waves between different points ~~(T1-TN)~~, method comprising:

(a) at least one step of emission in the course of which waves are emitted into the medium ~~(2)~~ by generating signals ei(t) on the basis of a number N of emission points ~~(T1-TN)~~ belonging to the medium, where N is an integer at least equal to 2 and i is an index lying between 1 and N which designates one of said N emission points,

(b) at least one step of reception in the course of which signals rj(t) are picked up from said waves after transmission in said medium, at a number M of reception points ~~(T1-TN)~~ belonging to the medium, where M is a non-zero natural integer and j is an index lying between 1 and M which designates one of said M reception points,

(c) and at least one step of determination of said impulse responses hij(t) between each emission point i and each reception point j on the basis of the signals emitted ei(t) and picked up rj(t),

~~characterized in that in~~ wherein during the course of step (a), said N emission points ~~(T1-TN)~~ are made to simultaneously emit the signals ei(t), these signals ei(t) having a duration T and each being a sum of n substantially monochromatic elementary signals, of like amplitude and of respective frequencies $f_{0,i}+k.\delta f$, where $f_{0,i}$ is a predetermined eigenfrequency at the point i, k is an integer lying between 0 and n, n is an integer at least equal to 2 and δf is a predetermined frequency interval, the respective eigenfrequencies $f_{0,i}$ at the various points i being distinct and lying in a frequency band of width δf,

and ~~in that in~~ wherein during the course of step (c), each impulse response hij(t) is calculated on the basis of a signal of correlation between the signal ei(t) emitted at the point i and the signal rj(t) picked up at the point j.

2. (Original) The method as claimed in claim 1, in which the respective eigenfrequencies $f_{0,i}$ at the various points i are separated pairwise by an offset $\delta f/N$.

3. (Currently Amended) The method as claimed in claim 1 ~~or claim 2~~, in which, in the course of step (c), said correlation signal is windowed by means of a gate function $\pi(t)$ of width $1/\delta f$.

4. (Original) The method as claimed in claim 3, in which, in the course of step (c), the impulse responses hij(t) are determined through the formula:

$$hij(t) = \Pi(t) . \int ei(\theta - t) . rj(\theta) d\theta .$$

5. (Currently Amended) The method as claimed in claim 1 ~~any one of the preceding claims~~, in which the waves transmitted in the medium between the emission points and the reception points are acoustic waves.

6. (Currently Amended) The method as claimed in claim 1 ~~any one of the preceding claims~~, in which, in the course of step (a), the medium where the waves are emitted is reverberant.

7. (Currently Amended) The method as claimed in claim 1 ~~any one of the preceding claims~~, in which the frequency interval δf is less than or equal to $1/\tau$, where τ is the temporal dispersion of the medium.

8. (Original) The method as claimed in claim 7, in which the frequency interval δf is substantially equal to $1/\tau$, where τ is the temporal dispersion of the medium.

9. (Currently Amended) The method as claimed in claim 1 ~~any one of the preceding claims~~, in which the duration T is at least equal to $N/\delta f$.

10. (Currently Amended) The method as claimed in claim 1 ~~any one of the preceding claims~~, in which the duration T is at least equal to $N.\tau$, where τ is the temporal dispersion of the medium.

11. (Currently Amended) The method as claimed in claim 1 ~~any one of the preceding claims~~, in which the elementary signals exhibit random phases.

12. (Currently Amended) The method as claimed in claim 1 ~~any one of the preceding claims~~, in which the waves are emitted with a certain passband, the frequencies f0i comprise a minimum frequency f0 and the number n is determined so that the frequency band lying between f0 and $f0+[(n+1).\delta f]$ substantially overlaps said passband.

13. (Currently Amended) The method as claimed in claim 1 ~~any one of the preceding claims~~, in which the reception points are coincident with the emission points (T1-TN).